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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/192,651	11/16/1998	TIMOTHY W. FUEHRER	2-9-24-11	1068

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EXAMINER

SINGH, RAMNANDAN P

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 06/19/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/192,651

Applicant(s)

FUEHRER ET AL.

Examiner

Dr. Ramnandan Singh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13,15,16,18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13,15,16,18 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Arguments***

1. Applicant's arguments filed 09 May 2003 have been considered but are moot in view of the new ground(s) of rejection.

2. **Status of Claims**

Claims 1, 5, 7, 8, 10 and 12 are amended.

Claims 14 and 17 are cancelled.

Claims 1-13, 15-16 and 18-19 are pending.

***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-13, 15-16 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott et al [US 6,385,235 B1] in view of Luscher, Jr. [US 5,600,551].

Regarding claims 1, 7 and 8, Scott et al teaches a digital direct access arrangement (DAA) 110Q shown in Fig. 16 including phone line side circuitry 118, an isolation barrier 120, and powered side circuitry 116, wherein the powered side circuitry

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116 may be connected to external controllers, such as digital signal processor (DSP), that may be a part of a communication device, such as phone or modem [Figs. 16, 18; col. 4, line 61 to col. 5, line 12; col. 21, lines 30-43; col. 24, lines 14-36]. Based on the DAA, Fig. 7 presents a fully differential bi-directional interface [Fig. 6B; col. 13, lines 18-28] for a communication system comprising powered side circuitry having a driver 703; a clock generator 704; and the other side of the isolation barrier having a driver 713; and a clock regeneration element 707 [ Figs. 7, 8; col. 15, line 34 to col. 18, line 12]. Further, Scott et al discloses a diode bridge 710 which recovers power from the driver and supplies it to the clock regeneration element 707 [Fig. 6B; col. 13, lines 18-28].

Scott et al does not teach expressly doubling the voltage of a clock signal.

Luscher, Jr. teaches a charge pump for doubling the voltage of a clock signal for use with a capacitive isolation barrier [Fig. 1; col. 1, lines 30-37; Fig. 7; col. 6, line 32 to col. 10, line 48; col. 1, lines 52-67; col. 2, lines 1-52; Fig. 10]. It is nevertheless a teaching to one of ordinary skill in the art.

Scott et al and Luscher, Jr. are analogous art because they are from a similar problem solving area, viz., communications with a DAA system.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to apply the voltage doubler of Luscher, Jr. to replace the diode bridge 707 of

Scott et al to receive a dual digital input and recover power therefrom; wherein the circuit of Lischer, Jr. inherently pumps charge onto capacitors C3 and C4 to double the voltage.

The suggestion/motivation for doing so would have been to transmit more power from the powered side of the DAA to the phone line side of the isolation barrier through the barrier capacitors [Luscher, Jr. col. 10, lines 33-48].

Regarding claims 2 and 9, Luscher, Jr. teaches the charge pump, as shown in Fig. 7, comprising a first capacitive element C1 having an input side connected to the DSP and an output side to the DAA; a second capacitive element C4 having an input and an output each connected to the DAA; and a rectifying diode D2 doubling the voltage of the clock [col. 6, lines 24-30].

Regarding claims 3-4 and 10-11, Luscher, Jr. teaches a charge pump as shown in Fig. 7 with square-pulses having opposite polarities 10a; and a diode rectifier D2.

Regarding claims 5 and 12, Scott et al teaches the clock regeneration element 707 connected in parallel with diode bridge 710 [Fig. 6B; col. 14, lines 23-41], which is to be replaced with the voltage double of Luscher, Jr. as shown above.

Regarding claims 6 and 13, Luscher, Jr. teaches the charge pump, as shown in Fig. 7, with a storage capacitor C4 [col. 6, lines 58-62; col. 7, lines 13-37; col. 8, lines 4-14].

Regarding claims 15-16 and 18-19, Scott et al teaches, in preferred embodiments, a first capacitive element 705, wherein the capacitor has a capacitance on the order of 100 pF [col. 11, line 60 to col. 12, line 11].

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Ramnandan Singh whose telephone number is (703)308-6270. The examiner can normally be reached on M-F(8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester Isen can be reached on (703)-305-4386. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)872-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-0377.

Dr. Ramnandan Singh  
Examiner  
Art Unit 2644



June 6, 2003



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